

### REMARKS

The specification has been amended to correct errors of a typographical and grammatical nature. Due to the number of corrections thereto, applicants submit herewith a Substitute Specification, along with a marked-up copy of the original specification for the Examiner's convenience. The substitute specification includes the changes as shown in the marked-up copy and includes no new matter. Therefore, entry of the Substitute Specification is respectfully requested.

The abstract has also been amended to more clearly describe the features of the present invention.

of the present invention.

Also submitted herewith is a proposed amendment to the drawings, wherein Figs. 2, 7, 8 and 9 have been amended at this time. Upon receipt of the approval of the amendment to the drawings and receipt of a Notice of Allowance, the proposed drawing corrections will be effected in accordance with present practice.


Entry of the preliminary amendments and examination of the application is respectfully requested.

To the extent necessary, applicant's petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 (Case: 503.39420X00)

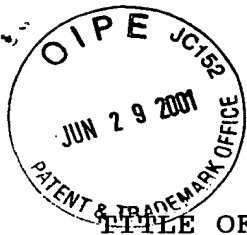
and please credit any excess fees to such deposit account.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP

  
\_\_\_\_\_  
Melvin Kraus  
Registration No. 22,466

DRA/MK/jla  
(703) 312-6600



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## TITLE OF THE INVENTION

INFORMATION PROCESSOR HAVING ELECTRONIC MAIL FUNCTION  
AND RECORDING MEDIUM STORING ELECTRONIC MAIL PROCESSING  
PROGRAM

5

## BACKGROUND OF THE INVENTION

The present invention relates to an information processor having an electronic mail function and <sup>to</sup> a recording medium storing an electronic mail processing program.

10 <sup>The sending</sup> Sending and receiving of a file or the like between a plurality of information processors is performed <sup>in a form</sup> <sup>by</sup> (of) attaching <sup>the</sup> [a] file to <sup>the</sup> [a] text of <sup>an</sup> electronic mail <sup>message</sup> using an electronic mail system connected to a public communication  
15 line or a network.

However, <sup>with this type of communication in</sup> there are problems <sup>the</sup> that, since <sup>an</sup> [a] size of <sup>message</sup> electronic mail <sup>greatly when</sup> is increased <sup>by attaching</sup> a large sized <sup>is attached thereto, an file, for example</sup> file, such as, image data, <sup>to the text of mail</sup>, the remaining capacity of <sup>the</sup> [a] mail server is largely decreased, which <sup>greatly hinders the receipt of additional</sup>  
20 <sup>also,</sup> causes incapability of receiving the following electronic mail. <sup>the</sup> [a] and that, since a large volume of data is carried on <sup>when such a large file is sent</sup> <sup>an</sup> [a] communication line, the performance of the communication line, particularly <sup>during such a transmission</sup> [the] analogue communication line, is degraded.

25 In order to solve these problems, some mail servers <sup>set</sup> [executes measures] that a limit (an upper limit) <sup>is set in</sup> <sup>to</sup> the size of <sup>data which maybe</sup> sent or received <sup>by</sup> electronic mail, <sup>and</sup> <sup>such that</sup>

electronic mail having a size exceeding this limit is not handled, or ~~[that]~~ electronic mail having a size exceeding a preset size is not immediately sent, but is sent <sup>at</sup> a time ~~[zone]~~ when the communication line is not busy.

5 However, in the case of <sup>a</sup> ~~[the]~~ mail server, <sup>which places a</sup> ~~[giving the]~~ limitation, <sup>on the</sup> ~~[to mail]~~ size, <sup>of mail which it will handle</sup> since a large-sized file can not <sup>be</sup> attached to electronic mail, <sup>handled by that mail server</sup> it is necessary to send and receive the file using another means. Therefore, there is a limitation <sup>on the</sup> ~~[in]~~ effective use of the electronic mail.

10 On the other hand, in the case of <sup>a</sup> ~~[the]~~ mail server, <sup>which controls the</sup> sending and receiving <sup>of</sup> electronic mail by controlling the <sup>transmission</sup> ~~[time]~~ ~~[zone]~~, since it is impossible to send and receive electronic mail without <sup>a</sup> delay, a file can not be sent or <sup>received at an</sup> ~~[receive in]~~ appropriate <sup>or desirable</sup> time. Therefore, <sup>the</sup> working efficiency <sup>of tasks</sup>,  
15 using the file is degraded.

A user can send electronic mail by dividing a file to be sent into small-sized files and attaching each of the divided files to <sup>separate</sup> a ~~[piece of the]~~ <sup>message</sup> electronic mail. However, since the work to divide the file to be sent and the work  
20 to send the file by attaching each of the divided files to each of the plural ~~[pieces of the same]~~ <sup>messages</sup> electronic mail, are necessary, <sup>work involved in</sup> the <sup>the file</sup> sending <sup>of the mail</sup> ~~[work]~~ by the user becomes complicated. Further, since the receiver is required to reconstitute the plural divided files attached to the plural ~~[pieces of the]~~ <sup>messages</sup> <sup>reconstitute</sup>  
25 ~~[same]~~ electronic mail, <sup>involved in receiving the file</sup> to the single original file, the ~~[receiving]~~ work becomes complicated.

## SUMMARY OF THE INVENTION

An object of the present invention is to provide an information processor having an electronic mail function which can easily attach a large-sized file to <sup>an</sup> [a piece of] electronic mail <sup>message</sup> and send or receive it, and to provide a recording medium storing an electronic mail processing program for the information processor.

The present invention is characterized by an information processor having an electronic mail function, which comprises a mail size upper limit value storing means for storing at least one upper limit value of a sending destination mail size; a mail size comparing means for comparing the upper limit value stored in the mail size upper limit value storing means with <sup>the</sup> [a] size of a [mail] main part of [sent] mail <sup>to be sent</sup>; a [sent] mail dividing means for dividing the [sent] mail <sup>to be sent</sup> into a plurality of sub-mail sections when the size of the [sent] mail exceeds the mail size upper limit value; and a mail sending means for sequentially sending sets of information individually including the divided sub-mail sections.

Further, the present invention is characterized by <sup>an</sup> [the] information processor having an electronic mail function, which further comprises a destination-based information registration database <sup>in which</sup> [a] data <sup>is</sup> [being] registered [in] [the destination-based information registration database], the data being destination-based information including whether or not a mail address, a mail upper limit value and

a divided mail reconstituting program for reconstituting  
 (the)<sup>a</sup> plurality of divided sub-mail sections to<sup>form</sup> the original  
 mail exist <sup>at</sup> [in] each destination.

Further, the present invention is characterized by  
 5 (the)<sup>an</sup> information processor having an electronic mail  
 function, which further comprises means for setting data (to)<sup>into</sup>  
 the destination-based information registration database,  
 the data being information <sup>to be used in</sup> (on) judging whether or not there  
 is necessity <sup>for</sup> (of) attaching <sup>a</sup> (the) reconstituting program <sup>to divided mail to be sent</sup>.

10 Further, the present invention is characterized by  
 (the)<sup>an</sup> information processor having an electronic mail  
 function, which further comprises a mail dividing  
 information adding means for adding mail dividing  
 information <sup>which is</sup> necessary for reconstituting (the)<sup>a</sup> plurality of  
 15 divided sub-mail sections to<sup>obtain</sup> the original mail form, to each  
 of the sets of information.

Further, the present invention is characterized by  
 (the)<sup>an</sup> information processor having an electronic mail  
 function, wherein the mail dividing information attached to  
 20 each of the sub-mail sections includes an identification  
 code for identifying the original mail, sub-numbers for  
 (expressing) <sup>identifying the</sup> order of the sub-mail sections, a <sup>total</sup> (dividing)  
 number of (the) mail <sup>sections</sup>, and (a) <sup>the</sup> capacity of each of the sub-mail  
 sections.

25 Further, the present invention is characterized by  
 (the)<sup>an</sup> information processor having an electronic mail  
 function, wherein the reconstituting program is a program

for reconstituting the original mail based on all the received sub-mail sections and the mail dividing information attached to each of the sub-mail sections.

Further, the present invention is characterized by  
 5 [the] <sup>an</sup> information processor having an electronic mail function, which further comprises a means for automatically attaching [the <sup>a divided</sup> dividing] <sup>the mail</sup> mail reconstituting program to sent mail when it is judged that [a] destination does not have [the] <sup>a</sup> divided mail reconstituting program.

10 Further, the present invention is characterized by [the] <sup>an</sup> information processor having an electronic mail function, wherein the mail size upper limit value storing means comprises a mail size upper limit value storing part(?) and a mail size upper limit value input means for inputting  
 15 a mail size upper limit value for each destination, the mail size upper limit value being stored in the mail size upper limit value storing part.

Further, the present invention is characterized by  
 20 [the] <sup>an</sup> information processor having an electronic mail function, wherein the mail size upper limit value storing means further comprises a mail size upper limit value switching means for switching a mail size upper limit value used by the mail size comparing means corresponding to a <sup>mail</sup> destination.

25 Further, the present invention is characterized by [the] <sup>an</sup> information processor having an electronic mail function, which further comprises means for setting a

subject name for each of the divided sub-mail sections, the subject name being <sup>the</sup> (a) <sup>the</sup> name of <sup>to which is</sup> (an) original mail, added <sup>the total</sup> [with] data corresponding to, number of divided sections and <sup>the</sup> [dividing] order of the sub-mail sections.

5 Further, the present invention is characterized by <sup>an</sup> [the] information processor having an electronic mail function, wherein it is displayed on a display unit of the information processor that <sup>divided</sup> [sent] mail is [divisionally] being sent.

10 Further, the present invention is characterized by <sup>an</sup> [the] information processor having an electronic mail function, wherein the <sup>of divided mail sections</sup> [dividing] number, is set so as to be minimized.

Further, the present invention is characterized by <sup>an</sup> 15 [the] information processor having an electronic mail function, wherein the <sup>of divided sections</sup> [dividing] number, is set so as to equalize <sup>the</sup> capacities of the divided sub-mail sections.

Furthermore, the present invention is characterized by an information processor having an electronic mail 20 function, which comprises a mail dividing judging means for judging whether or not mail dividing information is <sup>appended to</sup> [added] [in] received mail data; a divided-mail receiving judging means for judging <sup>by</sup> referring to the mail dividing information, whether or not all of <sup>the</sup> divided [sending] sub-mail <sup>of a divided mail message have been</sup> 25 sections [can be] received; and a mail reconstituting means for reconstituting the received sections of [divided sending] sub-mail data to a form of a single original item of



[sending] mail data.

Further, the present invention is characterized by  
 [the] <sup>an</sup> information processor having an electronic mail  
 function, wherein it is displayed on a display unit of the  
 5 information processor that <sup>divided</sup> [received] mail is [divisionally]  
 being, <sup>received</sup> [sent].

Furthermore, the present invention is characterized  
 by a method of sending and receiving electronic mail, the  
 method comprising the steps of accepting a request [of] <sup>for</sup>  
 10 sending mail; acquiring a mail size upper limit value of a  
 destination based on an address of the <sup>mail</sup> destination;  
 comparing <sup>the</sup> (a) size of the mail to be sent with the mail size  
 upper limit value of the <sup>mail</sup> destination; dividing the mail to  
 be sent into sub-mail sections according to an appropriate  
 15 dividing method and [sending the sub-mail sections by]  
 attaching dividing information to each of the sub-mail  
 sections, when the size of the mail to be sent is larger  
 than the mail size upper limit value of the <sup>mail</sup> destination;  
 attaching a reconstituting program [of divided mail] to the  
 20 <sup>divided sections</sup> (sent) mail <sup>a</sup> when (the) reconstituting program is not provided  
 at <sup>mail</sup> (to) the destination; and <sup>sending the divided mail sections</sup> directly sending the mail to be  
 sent when the size of the mail to be sent is smaller than  
 the mail size upper limit value of the destination;

Further, the present invention is characterized by  
 25 the method of sending and receiving electronic mail,  
 wherein, when the mail to be sent is divisionally sent, it  
 is displayed on a display unit that the mail is

divisionally sent.

Furthermore, the present invention is characterized by a method of sending and receiving electronic mail, the method comprising the steps of judging whether or not received mail is <sup>being</sup> divisionally [being] sent; after receiving all divided sub-mail sections, reconstituting the received sub-mail sections to <sup>obtain the as it existed</sup> [a] mail <sup>being</sup> before <sup>being</sup> divided using a reconstituting program and dividing information attached to each of the divided mail sections when the received mail is <sup>being</sup> divisionally sent; and executing <sup>being</sup> normal receiving processing when the received mail is not <sup>being</sup> divisionally sent.

Further, the present invention is characterized by <sup>a</sup> (the) <sup>a</sup> method of sending and receiving electronic mail, wherein, when the received mail is <sup>being</sup> divisionally sent, it is displayed on a display unit that the mail is <sup>being</sup> divisionally sent.

Furthermore, the present invention is characterized by a recording medium storing an electronic mail processing program for realizing an electronic mail function by loading the electronic mail processing program into an information processor, wherein the electronic mail processing program includes a program <sup>for</sup> <sup>a</sup> executing <sup>a</sup> processing for comparing an upper limit value of <sup>a</sup> sent mail size with <sup>a</sup> (a) <sup>the</sup> size of mail to be sent; and <sup>a</sup> processing for sending the mail by automatically dividing mail data to be sent into a plurality of sub-mail sections when the size of the mail to be sent exceeds the upper limit value of <sup>a</sup> sent mail size.

Further, the present invention is characterized by  
 (the)<sup>a</sup> recording medium storing an electronic mail processing  
 program, which further includes a program for executing<sup>a</sup>  
 mail dividing information adding processing for adding  
 5 information <sup>to</sup> [into] sent mail data, the information being  
 necessary for reconstituting divided items of divisional  
 sub-mail data <sup>obtain</sup> to a single original item of mail data.

Further, the present invention is characterized by  
 (the)<sup>a</sup> recording medium storing an electronic mail processing  
 10 program, which further includes a program <sup>for</sup> executing<sup>a</sup>  
 processing for attaching a reconstituting program for  
 reconstituting divided items of divisional sub-mail data to <sup>obtain</sup>  
 a single original item of mail data; and <sup>a</sup> processing for  
 setting <sup>into</sup> (to) a destination database <sup>information indicating</sup> whether or not <sup>the</sup> attaching  
 15 of the reconstituting program is necessary.

Further, the present invention is characterized by  
 (the)<sup>a</sup> recording medium storing an electronic mail processing  
 program, which further includes a program <sup>for</sup> executing<sup>a</sup>  
 mail size upper limit value setting processing for setting an  
 20 upper limit value of <sup>a</sup> sent mail size; and <sup>a</sup> mail size upper  
 limit value storing processing for storing the upper limit  
 value of <sup>a</sup> sent mail size set in the mail size upper limit  
 value setting processing in a destination database <sup>a</sup> an  
 information processor.

25 Further, the present invention is characterized by  
 the recording medium storing an electronic mail processing  
 program, which further includes a program <sup>for</sup> executing<sup>a</sup>

processing for switching the upper limit value of <sup>a</sup> mail size  
 (referring) <sup>with reference</sup> to the destination database corresponding to <sup>mail</sup> a  
 destination.

Further, the present invention is characterized by  
 5 (the) <sup>a</sup> recording medium storing an electronic mail processing  
 program, which further includes a program <sup>for</sup> executing <sup>a</sup>  
 processing for automatically changing a subject name of  
 each of <sup>the</sup> items of divided mail data to <sup>include an identification of the</sup> [each subject name]  
 [corresponding to] <sup>the</sup> number of divided sections and <sup>of division</sup> [dividing]  
 10 order of each of the items of divided mail data.

Furthermore, the present invention is characterized  
 by a recording medium storing an electronic mail processing  
 program for realizing an electronic mail function by  
 loading the electronic mail processing program into an  
 15 information processor, wherein the electronic mail  
 processing program includes a program <sup>for</sup> executing <sup>a</sup> mail  
 dividing information judging processing for judging whether  
 or not mail dividing information is attached to received  
 mail data; divided mail receiving judging processing for  
 20 judging, based on the mail dividing information, whether or  
 not all necessary items of divided sent sub-mail data have  
 been received; and mail reconstituting processing for  
 reconstituting the received plurality of items of divided  
 (sent) sub-mail data to <sup>obtain</sup> a single original item of [sending]  
 25 mail data.

## BRIEF DESCRIPTION OF DRAWINGS

FIG. 1 is a block diagram showing an embodiment of an information processor having an electronic mail function in accordance with the present invention.

5        FIG. 2 is a <sup>functional</sup> block diagram showing [a functional] means realized by executing an electronic mail processing program for sending electronic mail using a CPU in [the] <sup>an</sup> information processor having [the] <sup>an</sup> electric mail function in accordance with the present invention.

10       FIG. 3 is a <sup>diagram</sup> [view] showing the structure of a database [stored] in an auxiliary memory unit in [the] <sup>an</sup> information processor having [the] <sup>an</sup> electronic mail function in accordance with the present invention.

15       FIG. 4 is a <sup>diagram</sup> [view] showing the [structure] <sup>configuration</sup> of electronic mail data.

FIG. 5 is a <sup>diagram</sup> [schematic view] showing an electronic mail data dividing method executed by a sending mail dividing means in the information processor having [the] <sup>an</sup> electronic mail function in accordance with the present invention.

20       FIG. 6 is a <sup>diagram</sup> [view] showing the structure of a mail dividing information file in the information processor having [the] <sup>an</sup> electronic mail function in accordance with the present invention.

25       FIG. 7 is a flowchart showing electronic mail sending processing executed by [a preferable] <sup>an</sup> electronic mail processing program in order to realize the information processor having [the] <sup>an</sup> electronic mail function in accordance

with the present invention.

FIG. 8 is a <sup>functional</sup> block diagram showing [a functional] means realized by executing an electronic mail processing program for performing receiving processing of electronic mail in the information processor having <sup>an</sup> [the] electric mail function in accordance with the present invention.

FIG. 9 is a flowchart showing electronic mail receiving processing executed by [a preferable] <sup>an</sup> electronic mail processing program in order to realize the information processor having <sup>an</sup> [the] electronic mail function in accordance with the present invention.

FIG. 10 is a <sup>diagram</sup> [view] showing the inner structure of a divided mail storing unit in the information processor having <sup>an</sup> [the] electronic mail function in accordance with the present invention.

#### DESCRIPTION OF THE PREFERRED EMBODIMENTS

An embodiment of the present invention will be described <sup>with reference</sup> [below, referring] to the [accompanied] drawings.

FIG. 1 is a block diagram showing an embodiment of an information processor having an electronic mail function in accordance with the present invention. Referring to FIG. 1, the reference character 1 <sup>identifies</sup> [is] a CPU (central processing unit) for <sup>performing</sup> [realizing] various kinds of <sup>functions</sup> [functional means] to be described later by executing a program and for controlling various kinds of units. The reference character 2 <sup>identifies</sup> [is] a ROM (read-only memory) for storing the above-mentioned program.

The reference character 3 <sup>identifies</sup> [is] a RAM (random access memory) for storing data used when an application program and the above-mentioned program are executed. The reference character 4 <sup>identifies</sup> [is] a display unit for displaying a result of executing the programs or a mail <sup>message</sup>, [letter]. The reference character 5 <sup>identifies</sup> [is] a communication unit for sending and receiving mail data through a communication network. The reference character 6 <sup>identifies</sup> [is] an input/output unit for inputting a mail <sup>message</sup>, [letter] and for inputting information to control the various [kinds of] units. The reference character 7 <sup>identifies</sup> [is] an auxiliary memory unit, such as a hard disk unit, for storing [and memorizing] the programs, electronic mail data to be sent or received and <sup>generated</sup> (the) other necessary information, in the information processor. An electronic mail processing program is pre-stored into the ROM, or is read from a recording medium, such as a compact disk or a floppy disk, and <sup>and</sup> then stored in the auxiliary memory unit 7.

FIG. 2 is a <sup>functional</sup> block diagram showing [a functional] means realized by executing an electronic mail processing program for sending electronic mail using the CPU 1 in the information processor having (the) <sup>an</sup> electric mail function in accordance with the present invention, <sup>which provides various functions</sup> and shows the [functional means] <sup>the</sup> from <sup>the</sup> inputting of a mail sending request through the input unit 6 to <sup>the</sup> sending of [the] mail. When (a) <sup>the</sup> size of electronic mail to be sent is smaller than (a mail) <sup>an</sup> [size] upper limit value, the electronic mail is sent <sup>in the same manner as in</sup> (similarly to) a conventional processor without any

<sup>special</sup> [particular], processing. Therefore, the <sup>discussion of such a</sup> [illustration relating] <sup>this</sup> case is omitted.

As a request <sup>for</sup> [of] sending mail is input from the input unit 6, a mail size comparing means 8 acquires a mail size upper limit value corresponding to <sup>the</sup> [a] <sup>of the mail</sup> destination, from a mail size upper limit value storing part 10, using a mail size upper limit value switching means 9, and compares [a] <sup>the</sup> size of the [sending] mail <sup>being sent</sup> with the mail size upper limit value. The mail size upper limit value is pre-stored in the mail size upper limit value storing part 10 by a mail size upper limit value input means [for storing mail size upper] [limit value inputs] <sup>accordance with</sup> in the mail size upper limit value [storing part] of the destination database [in the information] [processor].

15 When the <sup>size of the</sup> [sent] mail <sup>to be sent</sup> [size] exceeds the mail size upper limit value, the [sent] mail data is divided into a plurality of divided [sent] mail items (sub-mail sections), each having a size smaller than the mail size upper limit value, by a [sending] mail dividing means 11. At that time, <sup>a process</sup> [processing] of storing mail dividing information, which is necessary for reconstituting the plurality of divided [sent] mail data items to a form of a single original item of sent mail [data], is also performed.

Next, a mail dividing information adding means 13 <sup>a</sup> performs <sup>for</sup> [of] adding mail dividing information stored in the mail dividing information storing means 12 to each of the divided [sent] mail sections, which <sup>have been</sup> [are] divided by



the [sent] mail dividing means 11. →

Then, a mail sending means 14 sends each of the divided [sent] mail data items to which the mail dividing information is added.

5 Here, each of the means shown in FIG. 2 will be described in <sup>more</sup> detail.

As shown in FIG. 3, personal information data, such as <sup>electronic</sup> each mail address, <sup>territorial</sup> name, address and so on is gathered in a card-form to be stored in the auxiliary memory unit 7, <sup>which serves</sup> as a database, and the mail size upper limit value storing part 10 is formed as a part of each personal information data card <sup>in the database</sup> 7a, to store the mail size upper limit value. This database can be also used as an address book which is referred <sup>to</sup> when <sup>the</sup> [a] destination of electric mail <sup>needs to be</sup> [is] specified.

15 Therefore, the mail size upper limit value switching means 9 is constructed so as to initially search the database using a destination address as a keyword, and to acquire a mail size upper limit value from the mail size upper limit value storing part 10 of the corresponding data card

20 (destination-based information data) 7a.

The [sent] mail dividing means 11 and the mail dividing information adding means 13 will <sup>now</sup> be described [below]. →

→ In this embodiment, the electric mail data is roughly classified into two parts, that is, a mail header part 15 and a mail main part 16, as shown in FIG. 4. The mail header part 15 includes data, such as <sup>a</sup> sender address, subject name, destination address, size and so on, and the

mail main part 16 contains <sup>the</sup> [a] <sup>the message</sup> text of mail, and an attached file. Therein, the attached file also contains data-compression processed file data.

The [sent] mail dividing means 11 changes such  
 5 electronic mail data to be sent into <sup>a</sup> [the] form <sup>in which</sup> [that] only the mail main part 16 is divided into a plurality of divided mail main parts (1) 171 to (n) 17n, and the mail header part 15 (151 to 15n) is attached to each of the divided main parts (1) 171 to (n) 17n, as shown in FIG. 5. Therein,  
 10 a user can select a dividing method <sup>which minimizes the</sup> [among minimizing] number of [the] sub-mail sections, <sup>equalizes</sup> [equalizing] the size of the sub-mail sections or <sup>schemes</sup> [the] other, which determines <sup>the</sup> number of [the] divided sub-mail sections of the mail. At that time, in each of the mail header parts 151 to 15n, the size  
 15 information based on the original mail header part 15 is replaced by a mail size value corresponding to each of the divided mail main parts (1) 171 to (n) 17n, which <sup>size information is</sup> [are] added to the mail header parts 151 to 15n, respectively. Further, the [sent mail dividing means 11] mail dividing information,  
 20 which is used for reconstituting the plurality of divided sent <sup>mail</sup> [male] data items <sup>that have been</sup>, divided as described above (to the) [single original form of the sent mail data], is stored in the mail dividing information storing means 12.

Next, the mail dividing information adding means 13  
 25 converts the mail dividing information stored in the mail dividing information storing means 12 into <sup>a</sup> file format to form mail dividing information files 201 to 20n, and adds

each of them to <sup>a corresponding one</sup> [each] of the divided sent mail data items as an attached file of the sent mail. A certain extension capable of identifying the original file is added to the mail dividing information files 201 to 20n in order to <sup>identify them</sup> [recognize] <sup>the time of</sup> as the mail dividing information at receiving the mail.

Each of the mail dividing information files 20 (201 to 20n) is constructed <sup>, as seen in Fig. 6,</sup> so as to contain <sup>fields indicating</sup> an identification code 21, <sup>section</sup> a sub-number 22, <sup>the total</sup> number of <sup>23 sections</sup> divisions 23, <sup>the</sup> a total capacity <sup>24 the</sup> of mail [24], and <sup>the</sup> a capacity <sup>25 the</sup> of divided mail [25]. The identification code 21 is a code specific to the original sent mail data before <sup>it is</sup> [being] divided. By attaching the same identification code to all of the plurality of divided sent mail data items, which <sup>have been</sup> [are] divided from <sup>a</sup> (the) single [sent] mail data item, the divided sent mail data items are prevented from <sup>being</sup> mixed <sup>up</sup> with (the) other mail data when the received divided mail data items are reconstituted to <sup>form</sup> the single original <sup>mail data, as it existed</sup> [form] before being divided, <sup>of mail data in</sup> [of mail data in] <sup>at</sup> the receiver side. The sub-number 22 <sup>identifies the</sup> [expresses] order <sup>in which</sup> (of) the divided <sup>are sent</sup> [sent] mail data items, when the divided received mail data items are reconstituted to <sup>form</sup> the single [form of the] received mail data. The sub-number 22 is stored when the mail dividing information adding means 13 attaches the mail dividing information files 201 to 20n to the sub-mail sections. Further, when the mail is divided using the above-mentioned means and is actually sent and received, a confirmation message is displayed on the display unit 4.

The confirmation <sup>message indicates</sup> [message expresses] that the mail is divisionally being sent, or that the received mail [is] <sup>has been</sup> divisionally [being] sent.

The above-described construction <sup>involves</sup> [is] processing in the case where <sup>an</sup> [the] information processor having <sup>an</sup> [the] electronic mail function <sup>on</sup> [in] the receiver side comprises [the] means for automatically reconstituting the plurality of divided received mail data items to <sup>obtain</sup> the single original form of the received mail data.

10 Description will be made below <sup>concerning the</sup> [on] processing, <sup>employed</sup> in the case where the information processor having <sup>an</sup> [the] electronic mail function <sup>on</sup> [in] the receiver side does not comprise <sup>an</sup> [the] means for automatically reconstituting the plurality of divided received mail data items to <sup>obtain</sup> the single original  
15 form of the received mail data.

Presence or absence of the divided mail reconstituting means in the information processor having the electronic mail function <sup>on</sup> [in] the receiver side is judged by providing a divided mail reconstituting means presence/  
20 absence information <sup>area</sup> [aria] 18 in the database [described]  
<sup>as seen in</sup> [referring to] FIG. 3, and by inputting and pre-storing <sup>presence/absence</sup> the information into the area 18. The divided mail reconstituting means presence/absence information is input  
25 <sup>via</sup> [from] the input unit 6.

When electronic mail is sent, the mail dividing information adding means 13 <sup>by</sup> judges, referring to the divided mail reconstituting means presence/absence information [on],

[an information processor having the electronic mail]  
 [function in a destination] whether or not the information  
 processor [in]<sup>at</sup> the <sup>mail</sup> destination has [the]<sup>a</sup> divided mail  
 reconstituting means. If the information processor [in]<sup>at</sup> the <sup>mail</sup>  
 5 destination does not have [the]<sup>a</sup> divided mail reconstituting  
 means, the mail dividing information adding means 13 adds a  
 divided mail reconstituting program, for executing divided  
 mail reconstituting processing, as an attached file to each  
 of the divided [sent] mail sections together with each of the  
 10 mail dividing information files 201 to 20n, respectively.  
 P Further, the subject name of the divided [sent] mail is <sup>changed</sup> [made]  
 [a change] corresponding to the information stored in each of  
 the mail dividing information files 201 to 20n. For example,  
 in a case where the subject name of the [sent] mail before  
 15 being divided is "Re: holding a meeting", the subject name  
 of the divided [sent] mail is changed to "Re: holding a  
 meeting (M/N)" (where M is sub-number 22, and N is <sup>the</sup> number  
 of mail divisions). In addition, at the same time, a  
 sentence notifying the receiver that the mail is divided  
 20 and sent is attached to the mail main part. (By)<sup>in</sup> this  
<sup>way</sup> [function], when [the]<sup>an</sup> information processor not having [the]  
 means for automatically reconstituting divided mail  
 receives divided [sent] mail, it is possible to avoid  
 confusion caused by successively receiving a plurality of  
 25 electronic mail <sup>sections</sup> [pieces] having the same subject name from a  
 single information processor.

FIG. 7 is a flowchart showing <sup>the</sup> electronic mail sending

processing executed by [a preferable]<sup>an</sup> electronic mail processing program in order to realize the information processor having [the]<sup>an</sup> electronic mail function as described above.

5 Processing Step S701:

A mail sending request is input from the input unit 6.

Processing Step S702:

The database is searched using a destination address as a keyword to acquire a mail size upper limit value from  
10 the mail size upper limit value storing part 10 of the corresponding data card (destination-based information data) 7a.

Processing Step S703:

The <sup>size of the</sup> [sent] mail <sup>message to be sent</sup> [size] is compared with the mail size  
15 upper limit value, and the processing is branched to the processing step S704 or the processing step S711 depending on the comparison result, <sup>i.e.</sup> large <sup>or</sup> [and] small.

Processing Step S704:

The [sent] mail data is divided into a plurality of  
20 divided [sent] mail sections having a size smaller than the mail size upper limit value.

Processing Step S705:

The mail dividing information necessary <sup>upon</sup> [for] receiving the plurality of divided sent mail data <sup>sections</sup> [items obtained by]  
25 [dividing the sent mail data and] for reconstituting them to the single original form of the [received] mail data is stored <sup>^</sup> in the mail dividing information storing means 12.

## Processing Step S706:

The mail dividing information file is attached to each of the divided [sent] mail sections.

## Processing Step S707:

- 5 It is judged <sup>by</sup> referring to personal information data for <sup>the mail</sup> [a] destination whether or not the information processor <sup>at</sup> [in] the destination of the electronic mail has a program for <sup>reconstituting</sup> [receiving] the plurality of divided sent mail data <sup>sections</sup> [items] [obtained by dividing the sent mail data and for] 10 [reconstituting them] to <sup>obtain</sup> the single original form of the [received] mail data.

## Processing Step S708:

The reconstituting program is attached to the divided [sent] mail as an attached file.

## 15 Processing Step S709:

<sup>The subject</sup> [Subject] <sup>each of</sup> name of the divided [sent] mail sections <sup>is</sup> [are] changed. The change of subject name is performed, for example, by adding "sub-number/number of divisions" to the subject name of <sup>each</sup> [the sent] mail <sup>section</sup> [before being divided].

## 20 Processing Step S710:

<sup>A check is made to determine</sup> [It is checked] whether or not the change of subject name for all the divided [sent] mail sections is completed. If not, the processing <sup>is</sup> returned to the processing step S709.

## Processing Step S711:

- 25 Each of the divided [sent] mail data <sup>sections</sup> [items] is sent.

FIG. 8 is a block diagram showing a functional means realized by executing an electronic mail processing program

for performing receiving processing of electronic mail in the information processor having <sup>an</sup> [the] electric mail function <sup>for performing operations</sup> [in]<sup>on</sup> the receiver side, and shows the functional means<sub>1</sub> from receiving electronic mail to notifying the user of  
 5 [receiving]<sup>receipt of</sup> the electronic mail.

As a mail receiving means 26 receives electronic mail, a divided mail processing means 27 judges whether or not the received electronic mail data is divided mail. Therein, if it is judged that the received electronic mail data is  
 10 divided mail, each of the received electronic mail<sub>1</sub> <sup>sections</sup> [pieces] is stored in a divided mail storing unit 28. This process is repeated until all the divided <sup>sections</sup> [sent] mail<sub>1</sub> [pieces] are received. When it is judged that all the divided <sup>sections</sup> [sent] mail <sup>sections</sup> [pieces]<sub>1</sub> have been received, each of the received items of  
 15 the divided received mail data is stored in a received mail storing unit 29, and <sup>the receipt of</sup> [the] notification of<sub>1</sub> mail [receive to] [the user] is displayed on the display unit 4.

The divided mail processing means 27 will be described below<sup>with reference</sup> [referring] to FIG. 9 and FIG. 10. FIG. 9 is  
 20 a flowchart showing the flow of processing executed by [a] <sup>an</sup> [preferable] electronic mail processing program in order to realize the divided mail processing means 27. FIG. 10 is a view showing the inner structure of the divided mail storing unit.

#### 25 Processing Step S901:

It is judged whether or not electronic mail data is received.



## Processing Step S902:

It is judged whether or not (an attached<sup>a</sup> file is <sup>attached</sup> added) to the received electronic mail, and the processing is branched to the processing step S903 or the processing step S911 depending on the (judging) result<sup>i.e.</sup> [of] presence (and) <sup>or</sup> absence of <sup>an</sup> the attached file.

## Processing Step S903:

It is judged<sup>by</sup> referring to an extension added to a file name of the attached file whether or not the attached file is a mail dividing information file 20, and the processing is branched to the processing step S911 or the processing step S904 depending on <sup>the</sup> [a] form of the attached file.

The processing steps S902 and S903 are mail dividing information judging <sup>steps</sup> [processing] for judging whether or not (the) mail dividing information is <sup>appended to</sup> [added in] the received mail data, and <sup>forms</sup> [composes] a mail dividing judging means.

## Processing Step S904:

The mail dividing information file 20 is opened, and the identification code 21 is read.

## Processing Step S905:

<sup>A search is made to determine if</sup> [It is searched that there exists] the identification code 21 of the read file<sup>exists a storing area of</sup> in the divided mail storing unit 28, and it is judged whether or not <sup>receipt</sup> [receiving] of the divided mail data<sup>has been</sup> [is] completed, and the<sup>the</sup> processing is branched to processing step S906 or processing step S908 depending on the judged result.

## Processing Step S906:

If ~~the~~ files having the specified identification code 21 <sup>have</sup> ~~are still~~ not <sup>been previously</sup> completed to be received, a mail storing area for a <sup>specified</sup> total capacity <sup>24</sup> of mail <sup>carrying</sup> ~~24 of~~ this identification code 21 is secured in the divided mail storing unit 28.

## Processing Step S907:

As shown in FIG. 10, the identification code 21, the number of mail divisions 23 and the total capacity <sup>24</sup> of mail ~~24~~ are stored in the divided mail storing unit 28. The numeral "0" is set to the number of divided mail receiving times 30.

## Processing Step S908:

The mail main part of the divided ~~received~~ mail, which has been received, <sup>in the mail storing area</sup> is stored <sup>in relative</sup> in ~~the~~ position <sup>indicated</sup> ~~shown~~ by the sub-number 22. <sup>specified in the header of the received mail section</sup>

## Processing Step S909:

The number of divided mail receiving times 30 is incremented by 1.

## Processing Step S910:

By comparing the number of mail divisions 23 with the number of divided mail receiving times 30, it is judged whether or not all <sup>of</sup> the divided ~~sent~~ mail <sup>sections have been</sup> ~~divisions are~~ received, and the processing is branched to the processing step S901 or the processing step S911 depending on the judged result.

The processing step S910 is <sup>a</sup> divided mail receiving judging <sup>step</sup> ~~processing~~, and <sup>forms</sup> ~~composes~~ the divided mail receiving

judging means.

Processing Step S911:

The data below the mail header part 15 in the divided mail storing unit 28 is transferred to the received mail storing unit 29.

The processing steps S907 to S909 and S911 are mail reconstituting processing <sup>steps</sup> for reconstituting the plurality of divided <sup>sections</sup> (received) mail data, <sup>have been</sup> (items), which <sup>obtain</sup> (are) received, to the original single form of mail data, and <sup>form</sup> (compose) a mail reconstituting means.

Processing Step S912:

<sup>The receipt</sup> (Receiving) of mail is <sup>indicated</sup> (notified) using the display unit 4.

Since the present invention is constructed as described above, it is possible to realize an information processor having an electronic mail function, which can easily send and receive electronic mail <sup>to which</sup> <sup>is attached</sup> (attached with) a large-sized file, and to realize a recording medium for recording an electronic mail processing program for the information processor.

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### ABSTRACT OF THE DISCLOSURE

Sending and receiving of electronic mail ~~attached~~ having an attachment with in the form of a large-sized file can be made easy. When a the size of mail to be sent exceeds an upper limit value of mail size, the mail is sent by automatically dividing the ~~sent~~ mail into a plurality of sub-mail sections, and the plurality of received ~~items~~ sections of divided mail are automatically reconstituted to obtain a single original form of the mail data.

FIG. 2

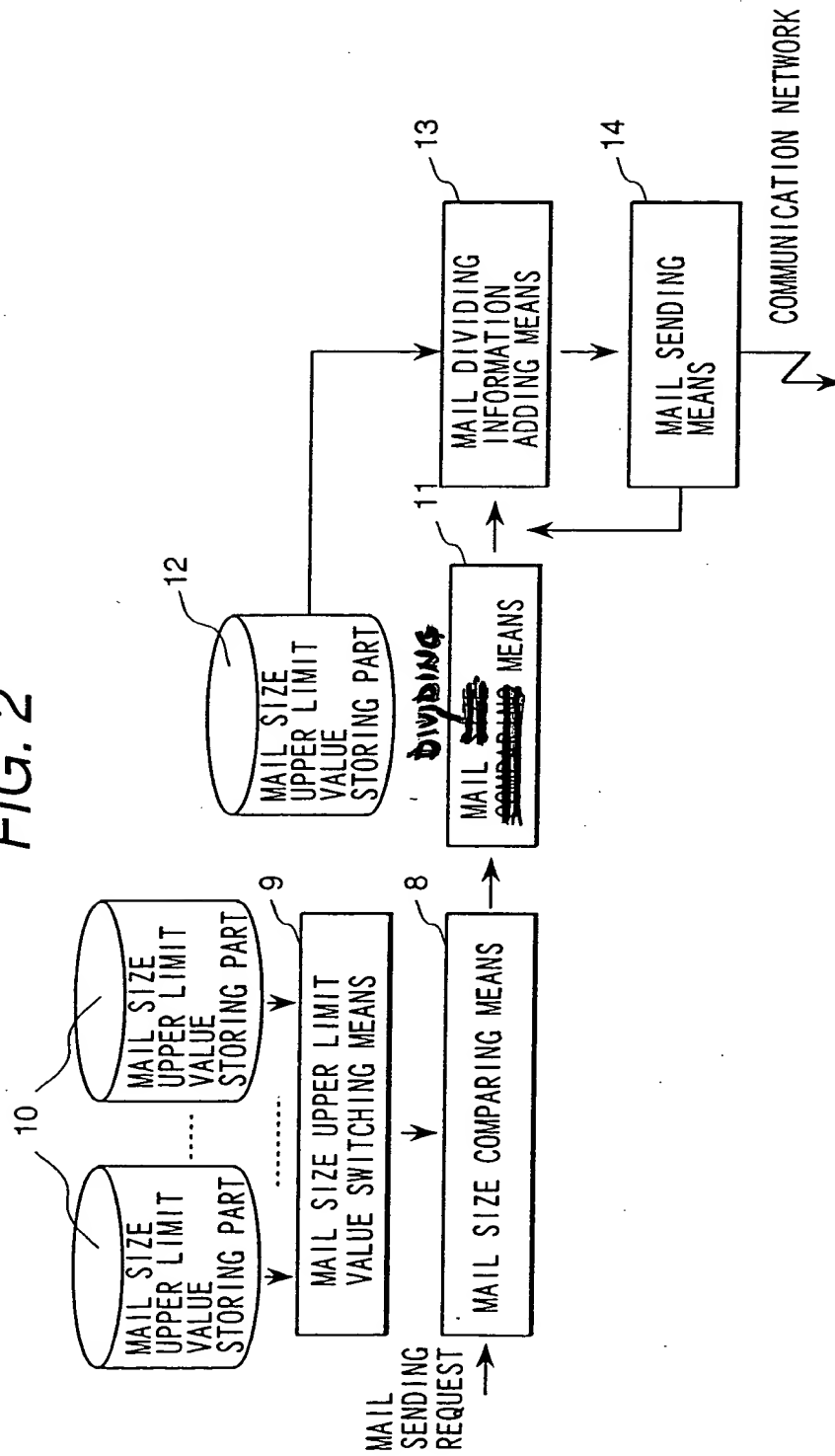


FIG. 7

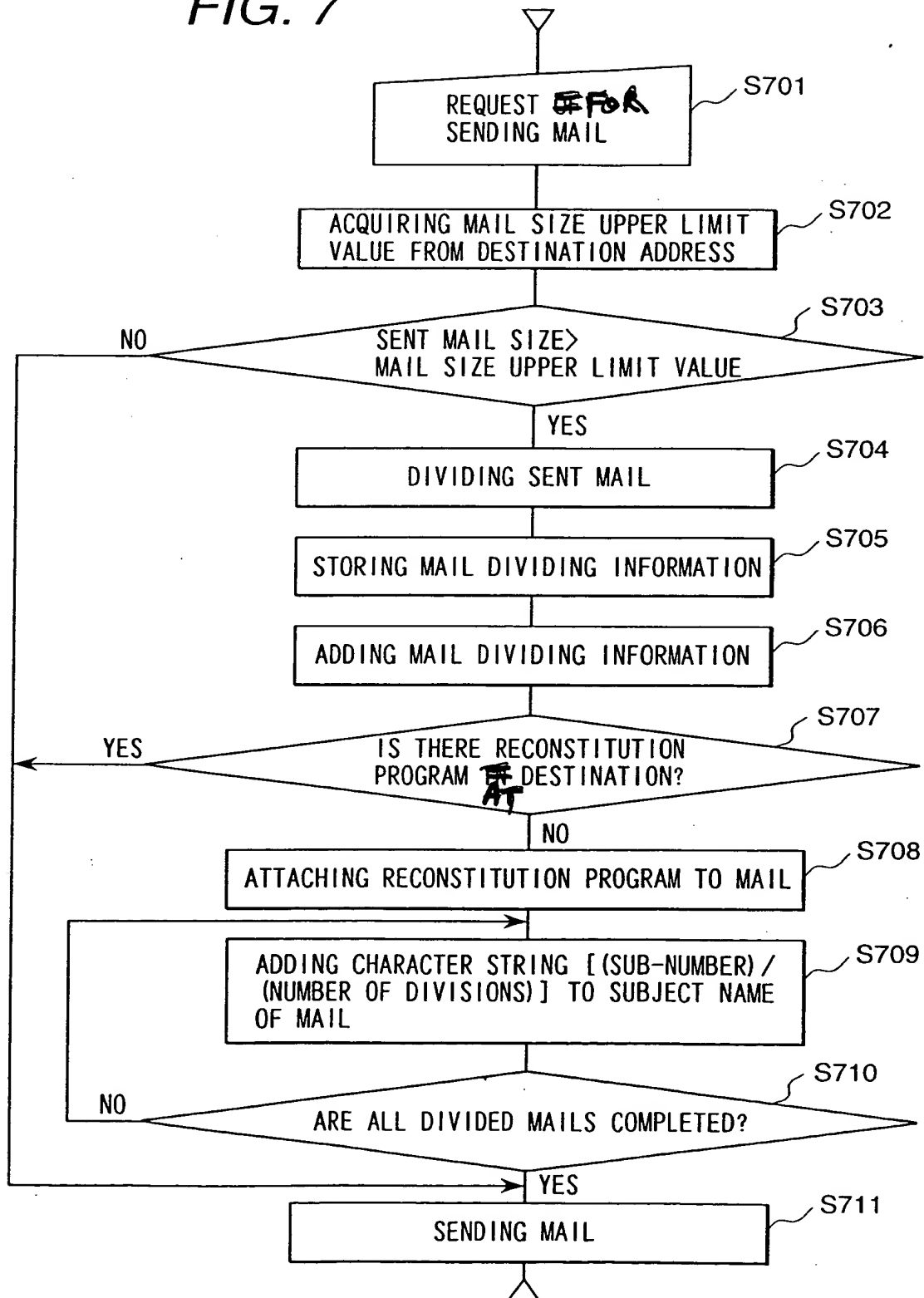


FIG. 8

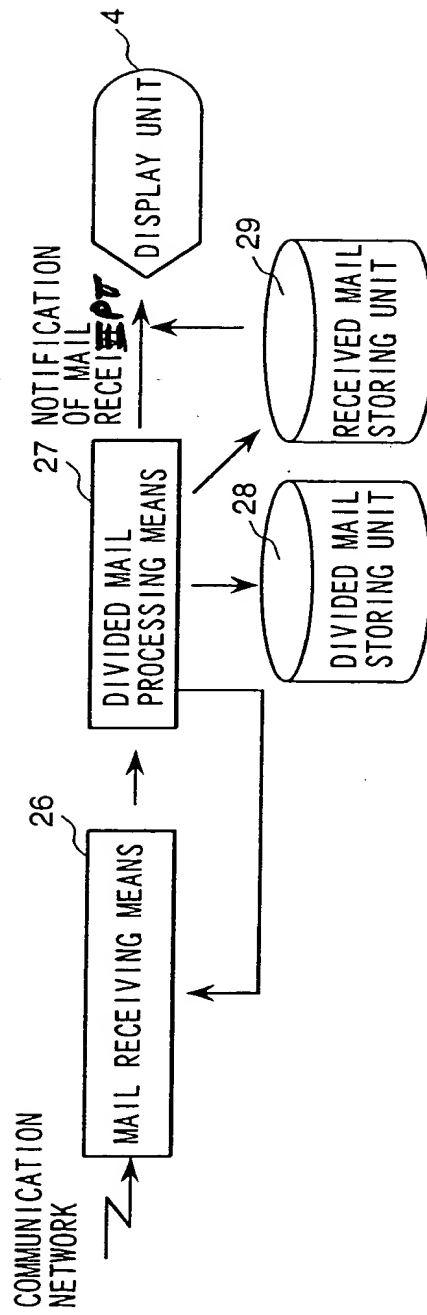


FIG. 9

